DOCUMENT RESUME

ED 454 690 EF 005 954

AUTHOR	Zimmerman, Robert S., Jr.
TITLE	Indoor Air Quality Guidelines for Pennsylvania Schools.
INSTITUTION	Pennsylvania State Dept. of Health, Harrisburg.
PUB DATE	1999-08-00
NOTE	17p.
AVAILABLE FROM	For full text: http://www.health.state.pa.us/hpa/schoolair.htm.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Air Pollution; Elementary Secondary Education; *Guidelines; *Planning; *Prevention; Public Schools
IDENTIFIERS	*Indoor Air Quality; *Pennsylvania

ABSTRACT

This report provides information and practical guidance on how to prevent indoor air quality (IAQ) problems in schools, and it describes how to implement a practical plan of action using a minimal amount of resources. It includes general guidelines to prevent or help resolve IAQ problems, guidelines on specific indoor contaminants, recommendations on IAQ management approaches, recommendations on seeking professional assistance, and selected resources and references. Indoor air contaminants discussed include carbon monoxide, carbon dioxide, pesticides, radon, mercury, as well as biological agents such as volatile organic compounds and lead. (GR)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 454 690

Indoor Air Quality Guidelines for Pennsylvania Schools

Robert S. Zimmerman, Jr., M.P.H.
Secretary of Health
August 1999

PREFACE

This document provides useful information on indoor air quality (IAQ) in schools to school officials and others who have an interest in this topic. It offers practical guidance that will help prevent IAQ problems in schools, and resolve or alleviate such problems if they do arise. It is particularly designed to assist those officials who have the primary responsibility of providing a safe and healthy environment for students, teachers, and the general school community. This easy-to-use guidance document describes how to implement a practical plan of action using a minimal amount of resources. The document includes general guidelines to prevent or help resolve IAQ problems, additional guidelines on specific indoor contaminants, recommendations on IAQ management approaches, recommendations on seeking professional assistance, and selected resources and references. School Officials are encouraged to review and proactively use the information in this document. Many IAQ problems can be resolved with preventative maintenance approaches as described.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Bureau of Epidemiology
August 1999

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
Helen K. Burns
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

INDOOR AIR QUALITY GUIDELINES FOR PENNSYLVANIA SCHOOLS

This document is designed to provide practical guidance that will help prevent indoor air quality (IAQ) problems in schools and resolve such problems quickly if they do arise. Recommendations for reasonable steps that can be taken by the school staff are offered with an eye toward flexibility for the specific needs of your school. The information in the document has been derived from the Environmental Protection Agency's (EPA's) report, *Indoor Air Quality Tools for Schools*, other published documents, and our experience in this area.

EF 005 954

WHY IAQ IS IMPORTANT TO YOUR SCHOOL

Most people are aware that outdoor air pollution can damage their health but many do not know that indoor air pollution can also have significant health effects. EPA studies of

BEST COPY AVAILABLE

human exposure to air pollutants indicate that indoor levels of pollutants may be 2-5 times, and occasionally 100 times, higher than outdoor levels. These levels of indoor air pollutants are of particular concern since most people spend the majority of their time indoors. Good indoor air quality in schools is an important component of a healthy indoor environment. It contributes to a favorable learning environment for students, productivity for teachers and staff, and a sense of comfort, health, and well-being. These elements combine to assist a school in its core mission -- educating children.

The definition of good indoor air quality management includes control of airborne pollutants, introduction and distribution of adequate outdoor air, and maintenance of acceptable temperature and relative humidity. Temperature and humidity are important because thermal comfort concerns underlie many complaints about "poor air quality." Temperature and humidity can also affect indoor contaminant levels. Failure to respond quickly and effectively to IAQ problems can lead to numerous adverse health, cost, and educational process consequences.

Children may be especially susceptible to air pollution The same concentration of pollutants can result in higher body burden in children than adults because children breathe a greater volume of air relative to their body weight.

Unlike other buildings, there are many unique aspects of schools. The occupants of schools are close together, with the typical school having about four times as many occupants as office buildings for the same amount of floor space. A variety of potential pollutant sources exist in schools, including art and science materials, industrial and vocational arts, and gymnasiums. In combination with natural ventilation, schools may use many heating, ventilating, and air conditioning systems (HVAC), including unit ventilators and roof-top units. All require appropriate care and maintenance.

TYPICAL IAQ PROBLEMS IN SCHOOLS

Indoor air contaminants can originate within the school building or be drawn in from the outdoors. If pollutant sources are not controlled, indoor air problems can develop even if the HVAC system is properly designed, operated, and maintained. Air contaminants consist of particles, dust, fibers, biological agents (e.g., bacteria, viruses, and mold), and gases or vapors. Sources of indoor air contamination include polluted outdoor air and underground sources (e.g., radon, pesticides, and leakage from underground storage tanks). Indoor air contamination can also be caused by a variety of indoor sources (e.g., equipment, furnishings, and housekeeping supplies).

Indoor concentration levels of air pollutants can vary by time and location within the school building, or possibly a single classroom. Pollutants can be emitted from point sources, such as science storerooms, or from area sources, such as newly painted surfaces. Pollutants can vary with time, such as only when floor stripping is done, or continuously such as fungi growing in the HVAC system.

Indoor air often contains a variety of contaminants at concentrations that are well below any standards or guidelines for occupational exposure. It is often difficult to relate complaints of specific health effects to exposures to specific pollutant concentrations, especially since the exposures may be to low levels of pollutant mixtures.

GENERAL GUIDELINES TO PREVENT OR HELP RESOLVE IAQ PROBLEMS

To prevent or help resolve indoor air quality problems effectively and efficiently, schools must ensure that recommended temperature and relative humidity ranges be maintained in the indoor air and that the HVAC system is working properly. In addition, monitoring for carbon dioxide (CO_2) may be useful for indicating when outdoor air ventilation may be inadequate. A properly designed and functioning HVAC system controls temperature and relative humidity levels to provide thermal comfort, distributes adequate amounts of outdoor air to meet the ventilation needs of school occupants, and isolates and removes odors and other contaminants through pressure control, filtration, and exhaust fans.

The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) **Standard 55-1992** describes the temperature and humidity ranges that are comfortable for most people. **Generally, temperature and humidity should be maintained within the comfort zone of 68 to 78 degrees and 30% to 60% relative humidity, depending on the season.**

ASHRAE's Standard 62-1989 should be followed for recommended outdoor air ventilation levels in schools. These levels are described in EPA's report, *Indoor Air Quality Tools for Schools*. **Generally, a range of 15 to 60 cubic feet per minute of outdoor air for each person in the area served by the HVAC system is recommended.**

Additionally, CO_2 can be used as a rough indicator of the effectiveness of ventilation. **CO_2 levels above 1000 parts per million (ppm) indicate inadequate ventilation with outdoor air.**

Finally, good housekeeping practices and common sense approaches used in the routine maintenance and upkeep of the school help to protect the quality of the indoor environment and the health and well-being of school occupants. There are **six basic control methods** for lowering concentrations of indoor air pollutants in school buildings:

Source Management

Source Management includes source removal, source substitution, and source encapsulation. It is the most effective control method when it can be practically applied. The best prevention method is never to bring unnecessary pollutants into the school building.

Local Exhaust

Local Exhaust is very effective in removing point sources of pollutants before they can be dispersed into the indoor air by exhausting the contaminated air outside. Examples where local exhaust is used include restrooms, kitchens, science labs and housekeeping storage rooms, printing and duplicating rooms, and vocational/industrial areas such as welding booths.

Ventilation

The ventilation system, when properly designed, operated, and maintained, will automatically take care of normal amounts of air pollutants. For certain situations, such as painting, temporarily increasing the ventilation can help dilute the concentration of

fumes in the air.

Exposure control

Exposure control includes adjusting the time, amount, and location of use to reduce potential exposures.

Air cleaning

This primarily involves the filtration of particles from the air as the air passes through the HVAC equipment.

Education

Education of the school occupants regarding IAQ is critical. If people are provided information about the sources and effects of pollutants under their control, and about the proper operation of the ventilation system, they can act to reduce their personal exposure.

School officials should appoint an **IAQ Coordinator** who will serve as the primary school contact for problem solving and problem prevention. The role and functions of an IAQ Coordinator are described in Section 3 of EPA's report, *Indoor Air Quality Tools for Schools*. In larger school districts, the IAQ Coordinator may be a district level administrative person, such as the business official, a health and safety officer, or the facilities manager. In smaller school systems, the IAQ Coordinator may be the Principal or Vice Principal at individual schools.

ADDITIONAL GUIDELINES ON SPECIFIC INDOOR CONTAMINANTS

EPA's report, *Indoor Air Quality Tools for Schools* (page 51), has a listing of typical indoor air contaminants in schools. The listing also contains a description of the contaminant, its sources, standards and guidelines, health effects, and measurement and control methods. The purpose of this section is to provide additional guidelines for schools on some of these specific indoor contaminants. Familiarization with this section should be considered for **all** school staff.

Carbon monoxide (CO)

CO is a colorless, odorless, and tasteless gas. It results from incomplete oxidation of carbon in combustion. Adverse health effects from CO (an asphyxiant gas) are due to the formation of carboxyhemoglobin in the blood, which inhibits oxygen uptake. CO is unique among air pollutants in that the degree of body burden from exposure to this gas can be directly determined by measuring the percent of carboxyhemoglobin in the blood. Normal carboxyhemoglobin concentrations are <2% for nonsmokers and 5%-9% for smokers. At moderate concentrations, early symptoms may be nonspecific (e.g., headache, dizziness, weakness, nausea, visual disturbances, and confusion). At higher concentrations, CO exposure may be fatal. Adequate ventilation is an important control measure.

No standards for CO have been agreed upon for indoor air. EPA's national ambient air quality standards for outdoor air are 9 ppm for eight hours and 35 ppm for one hour. These standards can be used as guidelines for indoor air in schools and should

not be exceeded. Monitoring and control measures (e.g., ventilation with outdoor air) are recommended whenever these guidelines are exceeded. It is also important to determine the source(s) of elevated CO levels and correct all identified problem areas.

Carbon dioxide (CO_2)

CO_2 is a colorless, odorless, and tasteless gas. It is a product of completed carbon combustion. Adverse health effects from CO_2 may occur since it is an asphyxiant gas, which essentially displaces oxygen in the air. At concentrations above 15,000 ppm, some loss of mental acuity has been noted.

ASHRAE's Standard 62-1989 recommends 1,000 ppm as the upper limit for comfort (odor) reasons. The ASHRAE standard can be used as a guideline for schools and should not be exceeded. Monitoring and control measures (e.g., ventilation with outdoor air) are recommended whenever the guideline is exceeded.

Pesticides

Pesticides are chemicals that are used to kill or control pests, which include bacteria, fungi, weeds, and other organisms, in addition to insects and rodents. Most pesticides are inherently toxic. Most contain volatile organic compounds. The specific symptoms that may result from a given pesticide exposure situation depend on the pesticide and its site of action, the dose received, and the sensitivity of the exposed individual(s). Chronic exposure to some pesticides can result in damage to the liver, kidneys, and nervous system.

There are no indoor air concentration standards for pesticides. Both EPA and the Pennsylvania Department of Agriculture recommend **Integrated Pest Management** in schools, an approach which minimizes the use of chemical pesticides. Pesticide products should be used according to application and ventilation instructions provided by the manufacturer.

Radon

Radon is a colorless, odorless, and tasteless radioactive gas. The unit of measure for radon is picocuries per liter (pCi/L). The earth around buildings is the principal source of indoor radon. Radon penetrates cracks and drain openings in foundations, basements, and crawl spaces. Water containing radon will release radon into the air when drawn for use indoors. Some building materials will also release radon into the air. Exposure to radon may cause lung cancer in humans.

EPA recommends taking actions to mitigate radon if levels exceed four pCi/L. Active soil depressurization and building ventilation are the two most commonly used strategies for controlling radon in schools.

Mercury

In recent years, increasing numbers of metallic mercury spills and contamination involving school children have been reported. Mercury occurs naturally in the environment in several forms. Metallic mercury is the liquid form used in a variety of

consumer products, including thermometers and barometers. It may also be found in school laboratories and accidental spills in the past have caused contamination problems. Metallic mercury vaporizes into the air at room temperatures. Small amounts of mercury (e.g., a few drops) can raise air concentrations to levels that may be harmful to health. Mercury vapor is denser than air and settles on or near the floor. Because of this effect, children may be exposed to higher concentrations of mercury than adults. Mercury affects the central and peripheral nervous systems and the kidneys.

To test for air contamination, a level of 0.003 milligrams of mercury per cubic meter of air (mg/m3) can initially be used as an "action" level for "screening" purposes in either homes or public places such as schools. This level is the most practical level since initial screening is usually performed with the Jerome meter, which only has a detection level of about 0.003 mg/m3. The decision to recommend temporary evacuation or any other action steps should be made on a case-by-case basis, depending on the circumstances. The **actual mercury levels** in the air should be determined by appropriate follow-up air sampling using more reliable testing methodology than the Jerome meter over an extended period of time. **Based on such follow-up testing, levels of mercury which exceed 0.001 mg/m3 would be considered unacceptable.** The level 0.001 mg/m3 is a health guidance value which is based on occupancy at a school (or a public place) not exceeding 40 hours per week. This value was derived based on EPA's lifetime health guidance value of 0.0003 mg/m3 for residential sites.

Biological Agents

People, animals, and environmental conditions produce biological materials which include bacteria, mold, and pollen. When airborne, these agents usually attach to dust particles of various sizes. Drapery, carpet, and other places where dust can collect harbor these agents. Dirty cooling coils, humidifiers, condensate drains, and ductwork can incubate bacteria and molds. Areas with high humidity can accelerate their growth. Various types of infections such as influenza are transmitted by air. Pollens and molds may cause allergic reactions, such as asthmatic episodes, for many individuals.

No standards exist for biological agents in indoor air, although ASHRAE recommends relative humidity levels between 30 and 60 percent to control growth. Other control measures include general good housekeeping and proper maintenance of HVAC equipment. Adequate ventilation and good air distribution are also helpful. The National Institute for Occupational Safety and Health (NIOSH) generally does not routinely recommend air sampling. Visible microbial growth on interior building surfaces and signs of water leaks found during a thorough inspection for possible moisture sources in the school are indications of a potential biological problem. Based on these findings, steps should be taken to correct conditions supporting such problems. If sampling is conducted, it should be done in both the problem area and other areas of the school. Differences in biological agents present in the problem area compared to other areas of the school can help to determine the extent of contamination and the appropriate approaches for remediation.

Volatile Organic Compounds (VOCs)

There are hundreds of VOCs found in indoor air, sometimes in concentrations that are suspected of being harmful. More commonly known VOCs include benzene, formaldehyde, methylene chloride, trichloroethylene, and tetrachloroethylene. Exposure

to VOCs can result in both acute and chronic health effects, depending on many factors such as the level of exposure and the length of exposure. A few VOCs have been directly linked to cancer in humans (e.g., benzene), and others are suspected of causing cancer.

No standards have been set for VOCs in non-industrial settings. In industrial settings, NIOSH has recommended occupational standards for many compounds. These NIOSH recommendations and other health guidelines and standards may be useful in determining if VOC levels measured in schools are acceptable. Where practical, uses of known sources of VOCs should be restricted. These materials should be stored in properly sealed containers and in well-ventilated areas, apart from occupied zones.

In the past, the Department of Health has provided guidance in residential and school situations involving underground fuel or gasoline spills. These spills increased indoor air levels of hydrocarbons. **Recommendations for temporary evacuation are made if total hydrocarbon levels were 10 ppm or higher, or benzene levels were 100 parts per billion (ppb) or higher.** At lower levels, corrective actions should be implemented to address the problem, including forced ventilation. The goal is to reduce the levels to normal background levels. The Occupational Safety and Health Administration (OSHA) has set a legal limit of 500 ppm of petroleum distillates and one ppm of benzene in air in the workplace.

Lead

Lead is a highly toxic metal. Exposure to lead can come from a variety of sources, including contaminated soil and dust, and air. Lead-based paint is the most common source of lead exposure to children. Lead can cause damage to the brain, kidneys, nervous system, and red blood cells. Children are especially vulnerable to lead exposure, since lead is more easily absorbed into growing bodies, and the tissues of small children are sensitive to its effects. Exposure to lead is estimated by measuring lead levels in the blood.

Preventive measures to reduce lead exposure in schools include keeping children away from areas where paint is chipped or peeling and assuring that children are protected from contaminated air during any lead abatement projects in schools. **Currently, there are no indoor air standards for lead in schools.** Existing standards for lead are for outdoor air or industrial workplaces.

ADDITIONAL RECOMMENDATIONS ON IAQ MANAGEMENT APPROACHES

School officials are encouraged to develop and implement their own **IAQ Management Plan** in order to address, prevent, and resolve IAQ problems in their specific schools. EPA's report, *Indoor Air Quality Tools for Schools*, provides a set of flexible and specific activities which should be useful to school officials in developing such a plan. A key feature of the plan is the selection of an **IAQ Coordinator**. Other critical features of the plan include establishing necessary **IAQ Policies**, **Assessing the Current Status** of indoor air quality in the school through periodic inspections and maintaining appropriate logs and checklists, **Performing Necessary Repairs and Upgrades**, and **Implementing Final Follow-up Assessments and Steps**. Because of the complexities involved in setting priorities for repairs and upgrades, and for committing school resources, it is

important to maintain good communication to build consensus involving school management and all appropriate committees and groups. In dealing with indoor air problems, an important management approach is to foster a team approach for problem solving and consensus building. The **IAQ Team** should include, but not necessarily be limited to, teachers, administrative staff, facility operators, custodians, school nurses, school boards, contract service providers, and parents and students.

RECOMMENDATIONS ON SEEKING PROFESSIONAL ASSISTANCE

Many indoor air problems can be resolved when school personnel follow good housekeeping approaches, such as described earlier under guidelines. Many potential problems can be prevented if students and staff cooperate to maintain good indoor air quality in the school. Some problems may be difficult to resolve, however, and may require outside assistance. Local, State or Federal governmental agencies (e.g., Education, Health, Environmental Protection, or Agriculture Agencies) may be able to provide expert assistance or direction in solving IAQ problems. If available governmental agencies do not have personnel with the appropriate skills to assist in solving your IAQ problem, they may be able to direct you to private firms or consultants in your area with experience in indoor air quality work. Some of these firms may be found in the yellow pages (e.g., under "Engineers," "Environmental and Ecological Services," "Laboratories-Testing," or "Industrial Hygiene Consultants") or by asking other schools for referrals. The skills of HVAC engineers and industrial hygienists are very useful for investigations of serious IAQ problems. Some professionals who work with IAQ problems (e.g., engineers, industrial hygienists) have licensing and certification requirements to practice in their disciplines. Input from other disciplines may also be important, depending on the nature of the problem.

SELECTED RESOURCES

This section lists organizations with information or services related to indoor air quality. In addition, publications or information available on the Internet are also provided.

Pennsylvania State Government

Your questions and concerns about indoor air problems in schools can frequently be answered best by commonwealth agencies. Possible contacts with the Commonwealth of Pennsylvania are the following:

Pennsylvania Department of Health
Bureau of Community Health Services
717-787-4366
District offices and county/municipal health departments serving specific areas of the state (See attached list)

Pennsylvania Department of Health
Division of School Health
717-787-2390

Pennsylvania Department of Health
Bureau of Epidemiology

Division of Environmental Health Assessment
717-787-1708 or 717-783-4677
(Health consultation on environmental health issues and public policy issues)

Pennsylvania Department of Environmental Protection, Field Operations
717-787-5028 (Regional offices serving specific areas of the state – See attached list)

Pennsylvania Department of Environmental Protection
Bureau of Air Quality Control
717-787-9702, (Air quality control issues and problems)

Pennsylvania Department of Agriculture
Division of Health and Safety
717-787-4843, (Integrated Pest Management in schools; pesticides; hypersensitivity registry)

U.S. Environmental Protection Agency (EPA)

EPA conducts a comprehensive non-regulatory indoor air quality program that emphasizes research, information dissemination, technical guidance, and training. EPA also issues regulations and carries out other activities that affect indoor air quality under the laws for pesticides, toxic substances, and drinking water.

Indoor Air Quality Information Clearinghouse
P.O. Box 37133
Washington, D.C. 20013-7133
Toll Free: 1-800-438-4318
(Information specialists are on duty Monday to Friday from 9:00 a.m. to 5:00 p.m. eastern time. The Clearinghouse provides indoor air quality information and publications.)

EPA's Internet Address for IAQ and Schools: http://www.epa.gov/iaq/schools/

Selected EPA's IAQ technical reports and publications:
Indoor Air Quality Basics for Schools, October 1996 (fact sheet).
Indoor Air Quality Tools for Schools Kit, 1995.
Building Air Quality: A Guide for Building Owners and Facility Managers, 1991.

MidAtlantic Environmental Hygiene Resource Center

The MidAtlantic Environmental Hygiene Resource Center (MEHRC) was established to provide training in indoor environments, with particular focus on indoor air quality. The Center was established with support from EPA, Region III, the U.S. Public Health Service, Region III, and the University City Science Center. The Center is a non-profit program which aims to meet the diverse needs of those concerned with indoor environments through training in engineering, microbiological, health, legal and other issues, ranging from introductory to advanced technical levels.

MidAtlantic Environmental Hygiene Resource Center
University City Science Center
3624 Market Street, First Floor East
Philadelphia, PA 19104

215-387-4096

MEHRC's Internet Address: http://www.libertynet.org/mehrc/

National Institute for Occupational Safety and Health (NIOSH)
1-800-35-NIOSH
www.cdc.govniosh

The American Society of Heating, Refrigerating, and Air–Conditioning Engineers (ASHRAE)
1791 Tullie Circle, NE
Atlanta, GA 30329
404-636-8400
www.ashrae.org

The Occupational Safety and Health Administration (OSHA)
OSHA Region III Office
215-596-1201
www.osha.gov

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HEALTH

April 26, 1999

NORTHEAST DISTRICT

District Executive Director
School Health Consultant
665 Carey Avenue
Wilkes-Barre, PA 18702-1466
Phone: 570-826-2062
Fax: 570-826-2238

COUNTIES

Carbon
Lackawanna
Lehigh
Luzerne
Monroe
Northampton
Pike
Susquehanna
Wayne
Wyoming

SOUTHEAST DISTRICT

District Executive Director
School Health Consultant
Reading State Office Building
625 Cherry Street – Room 442
Reading, PA 19602-1187
Phone: 610-378-4352
Fax: 610-378-4527

COUNTIES

Berks
Bucks
Chester
Delaware
Lancaster
Montgomery
Philadelphia
Schuylkill

NORTHCENTRAL DISTRICT

District Executive Director
School Health Consultant
Water Tower Square, Suite 109
1000 Commerce Park Drive
Williamsport, PA 17701-5996

COUNTIES

Bradford
Centre
Clinton
Columbia
Lycoming
Northumberland
Potter
Snyder
Sullivan
Tioga

Phone: 570-327-3400
Fax: 570-327-3748

Montour Union

SOUTHCENTRAL DISTRICT

District Executive Director
School Health Consultant
Uptown Shopping Plaza
2971C North Seventh Street
Harrisburg, PA 17110-2109
Phone: 717-787-8092
Fax: 717-787-3151

COUNTIES

Adams
Bedford
Blair
Cumberland
Dauphin
Franklin
Fulto
Huntingdon
Juniata
Lebanon
Mifflin
Perry
York

NORTHWEST DISTRICT

District Executive Director
School Health Consultant
19 McQuiston Drive
Jackson Center, PA 16133

Phone: 814-332-6920
Fax: 814-332-6980

COUNTIES

Cameron
Clarion
Clearfield
Crawford
Elk
Erie
Forest
Jefferson
Lawrence
McKean
Mercer
Venango
Warren

SOUTHWEST DISTRICT

District Executive Director
School Health Consultant
514 State Office Building
300 Liberty Avenue
Pittsburgh, PA 15222-1210
Phone: 412-565-5085
Fax: 412-565-7582

COUNTIES

Allegheny
Armstrong
Beaver
Butler
Cambria
Fayette
Greene
Indiana
Somerset
Washington
Westmoreland

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

July 6, 1999

SOUTHEAST REGION OFFICE

Joseph Feola, Acting
Regional Director
Suite 6010, Lee Park
555 North Lane
Conshohocken, PA 19428-2233
Phone: 610-832-6012
Fax: 610-832-6022
Email: Feola.Joseph@DEP.State.PA.US

COUNTIES

Bucks
Chester
Delaware
Montgomery
Philadelphia

NORTHEAST REGION OFFICE

COUNTIES

William F. McDonnell
Regional Director
2 Public Square
Wilkes-Barre, PA 18711-0790
Phone: 717-826-2511
Fax: 717-830-3051
Email: McDonnell.William@al.DEP.State.PA.US

Carbon	Pike
Lackawanna	Schuylkill
Lehigh	Susquehanna
Luzerne	Wayne
Monroe	Wyoming
Northampton	

SOUTHCENTRAL REGION OFFICE COUNTIES

Michael Steiner
Regional Director
One Ararat Boulevard
Harrisburg, PA 17110
Phone: 717-540-5012
Fax: 717-657-4446
Email: Steiner.Michael@DEP.State.PA.US

Adams	Huntingdon
Bedford	Juniata
Berks	Lancaster
Blair	Lebanon
Cumberland	Mifflin
Dauphin	Perry
Franklin	York
Fulton	

NORTHCENTRAL REGION OFFICE COUNTIES

Robert C. Yowell
Regional Director
208 West Third Street
Williamsport, PA 17701
Phone: 717-327-3695
Fax: 717-327-3565
Email: Yowell.Robert@DEP.State.PA.US

Bradford	Montour
Cameron	Northumberland
Centre	Potter
Clearfield	Snyder
Clinton	Sullivan
Columbia	Tioga
Lycoming	Union

SOUTHWEST REGION OFFICE COUNTIES

Charles Duritsa
Regional Director
400 Waterfront Drive
Pittsburgh, PA 15222-4745
Phone: 412-442-4179
Fax: 412-442-4194
Email: Duritsa.Charles@DEP.State.PA.US

Allegheny	Greene
Armstrong	Indiana
Beaver	Somerset
Cambria	Washsington
Fayette	Westmoreland

NORTHWEST REGION OFFICE COUNTIES

Steven C. Beckman
Regional Director
230 Chestnut Street
Meadville, PA 16335-3481
Phone: 814-332-6816

Butler	Jefferson
Clarion	Lawrence
Crawford	McKean
Elk	Mercer
Erie	Venango

Fax: 814-332-6125 Forrest Warren
Email: Beckman.Steven@DEP.State.PA.US

COUNTY/MUNICIPAL HEALTH DEPARTMENTS

July 30, 1999

ALLEGHENY COUNTY HEALTH DEPARTMENT

3333 Forbes Avenue
Pittsburgh, PA 15213
Director: Bruce W. Dixon, MD
Email: dixonbru+@achd.net

Deputy Director, Operations: Gerald M. Barron
Deputy Director, Bureau of Environmental Quality: Vacant
Director, Bureau of Policy Development & Assessment: Carol Synkewecz
Director, Bureau of Administration: Janet M. Norkus
Nursing Contacts: Joan McMahon, RN
Phone: 412-578-8026
412-687-ACHD(2243)
FAX: 412- 78-8325

ALLENTOWN BUREAU OF HEALTH

Alliance Hall
245 North 6th Street
Allentown, PA 18102-4128
Director of Health: Barbara E. Stader, RN, MSN
Email: stader@allentowncity.org
Associate Director of Environmental Health Services: Thomas T. Morgan, RS
Associate Director of of Personal Health Services: Belle Potter-Marks, RN,MPH
Phone: 610-437-7760
FAX: 610-437-8799

BETHLEHEM HEALTH BUREAU

City Hall
10 East Church Street
Bethlehem, PA 18018-6069
Director: Michele Belovich-Faust
Email: aligi@prolog.net
Medical Director: Bonnie S. Coyle, MD, MS
Environmental Director: Harvey Joseph
Director of Nursing: Janet Weller, RN
Phone: 610-865-7087
FAX: 610-865-7326

BUCKS COUNTY DEPARTMENT OF HEALTH

Neshaminy Manor Center
Doylestown, PA 18901
Director: Lewis D. Polk, MD, MPH
Email: bcpahd2@bellatlantic.net
Public Health Administrator: Gordian V. Ehrlacher
Director of Bureau of Environmental Health: Lee W. Thomas, PE
Email: bclepc@buckslepc.com
Director of Nursing: Sally Anne Fabian, MSN, RN
Phone: 215-345-3318
FAX: 215-345-3833

CHESTER COUNTY HEALTH DEPARTMENT

601 Westtown Road, Suite 290
P.O. Box 2747
West Chester, PA 19380-0990
Director: John P. Maher, MD, MPH
Email: j_maher@mail.co.chester.pa.us (Do not use MIME format when sending Email to Chester County. They will not have new system until first of the year.)
Director, Bureau of Environmental Health Protection: David A. Jackson, RS
Email: d_jackson@mail.co.chester.pa.us
Director, Bureau of Personal Health Services:
Elizabeth Walls, MSN, MBA, RNC, CNA
Director, Bureau of Administrative & Support Services:
Margaret C. Rivello, MBA, CHE
Director, Public Health Education: William Wiseman
Phone: 610-344-6225
FAX: 610-344-6727

ERIE COUNTY DEPARTMENT OF HEALTH

606 West Second Street
Erie, PA 16507
Director: Joseph Trzybinski
Email: director@erie.net
Director, Bureau of Environmental Health: Joseph J. Vogel
Director of Nursing: Charlotte Berringer, RN
Phone: 814-451-6700
FAX: 814-451-6766

MONTGOMERY COUNTY HEALTH DEPARTMENT

P.O. Box 311
1430 DeKalb Street
Norristown, PA 19404-0311
Director: Robert Gage, MSPH
Email: rgage@montcopa.org

Medical Director & Deputy Director for Personnel Services:
Walter Tsou, MD, MPH ext 104
Deputy Director for Environmental Health Services:
Anna Johnson-Entsuah - Email: AJohnson@montcopa.org
Director, Clinical Services & Public Health Nursing:
Anita Crielly, RN, MS
Phone: 610-278-5117
FAX: 610-278-5167

PHILADELPHIA DEPARTMENT OF PUBLIC HEALTH

1101 Market Street, Suite 840
Philadelphia, PA 19107
Health Commissioner: Estelle B. Richman
Email: Estelle.Richman@phila.gov
Phone: 215-685-5670
Fax: 215-685-5358
Administrative Assistant to Commissioner:
Kathleen Devlin - 215-685-5688
Medical Director: Vacant
Deputy Health Commissioner for Health Promotion/Disease Prevention
Lawrence Robinson, MD, MPH
Email: larry.robinson@phila.gov
Phone: 215-685-5350/5351
Fax: 215-685-5358
Assistant Health Commissioner for Environmental Health Services:
Randall B. Hirschhorn - Email: Randall.Hirschhorn@phila.gov
Deputy Health Commissioner for Public Health Services: John F. Domzalski
Director of Nursing: Gloria J. Alford, RN

WILKES-BARRE CITY HEALTH DEPARTMENT

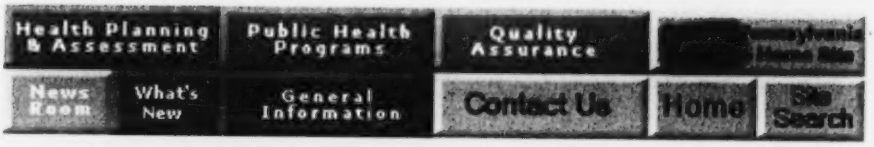
16 East Northampton Street
Wilkes-Barre, PA 18701
Director: Michael D. Elias
Email: Meliaswbhd@aol.com
Phone: 570-208-4268
Fax: 570-208-4272
Associate Director of Personal Health Services: Patricia McNulty, RN, BSN
Associate Director of Environmental Health Services: Henry Radulski

YORK CITY BUREAU OF HEALTH

One Market Way West
Third Floor
York, PA 17401-1231
Director: David L. Hawk, MD, MPH
Email: dhawk@yorkcity.org
Director of Nursing: Vacant
Phone: 717-849-2252

FAX: 717-849-2329

Back to Health Planning and Assessment



Home Page Health Planning & Assessment Public Health Programs Quality Assurance
News Room What's New! General Information Contact Us PA Home Page

Commonwealth Privacy Policy

Last modified on 02/27/01

BEST COPY AVAILABLE